

May 25, 1843.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

James Moncrieff Arnott, Esq., and Samuel Elliott Hoskins, M.D., were balloted for, and duly elected into the Society.

The following papers were read, viz.—

1. "Meteorological Journal, from January to April inclusive, 1843, kept at Guernsey." By Samuel Elliott Hoskins, M.D. Communicated by Samuel Hunter Christie, Esq., Sec. R.S.

2. "On the Respiration of the Leaves of Plants." By William Haseldine Pepys, Esq., F.R.S.

The author gives an account of a series of experiments on the products of the respiration of plants, and more particularly of the leaves; selecting, with this view, specimens of plants which had been previously habituated to respire constantly under an inclosure of glass; and employing, for that purpose, the apparatus which he had formerly used in experimenting on the combustion of the diamond, and consisting of two mercurial gasometers, with the addition of two hemispheres of glass closely joined together at their bases, so as to form an air-tight globular receptacle for the plant subjected to experiment.

The general conclusions he deduces from his numerous experiments conducted during several years, are, first, that in leaves which are in a state of vigorous health, vegetation is always operating to restore the surrounding atmospheric air to its natural condition, by the absorption of carbonic acid and the disengagement of oxygenous gas: that this action is promoted by the influence of light, but that it continues to be exerted, although more slowly, even in the dark. Secondly, that carbonic acid is never disengaged during the healthy condition of the leaf. Thirdly, that the fluid so abundantly exhaled by plants in their vegetation is pure water, and contains no trace of carbonic acid. Fourthly, that the first portions of carbonic acid gas contained in an artificial atmosphere, are taken up with more avidity by plants than the remaining portions; as if their appetite for that pabulum had diminished by satiety.

3. A paper was also in part read, entitled "On the minute Structure of the Skeletons or hard parts of the Invertebrata." Part II. By William B. Carpenter, M.D. Communicated by the President.

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June 1, 1843.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

Sir John P. Boileau, Bart., and the Rev. John Wright, M.A., were balloted for, and duly elected into the Society.